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ABSTRACT

SINGLE-COMPARTMENT, SELF-ERASING,  
SOLUTION-PHASE ELECTROCHROMIC DEVICES,  
SOLUTIONS FOR USE THEREIN, AND USES THEREOF

5           Single-compartment, self-erasing,  
solution-phase electrochromic devices, solutions of  
electrochromic compounds for use as media of variable  
transmittance in such devices, and electrochromic  
compounds for such solutions are provided. The devices  
10 of the invention are surprisingly stable to cycling  
between light and dark states, have continuously  
variable transmittance to light as a function of  
electrical potential applied across the solution in a  
device, and have transmittance that can be varied over  
15 more than a factor of 10, from clear to dark or from  
dark to clear, in several seconds. Thus, the devices  
are especially suitable as variable transmittance  
components of variable transmission light filters,  
including windows, and variable reflectance mirrors,  
20 including anti-glare rearview mirrors in automobiles.  
Also provided are improved variable reflectance mirrors,  
wherein transmittance of reflected light is varied by  
thermochromic, photochromic or electro-optic means and  
wherein the reduction in transmittance which is required  
25 to eliminate perceptible reflection of an object to the  
eyes of an observer is reduced by disposing the plane of  
the highly reflective surface of the mirror at an angle  
with respect to the plane of the surface through which  
light from the object enters the mirror.